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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/620,649

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Cetin Nmi Kaya

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EXAMINER

WILCZEWSKI, MARY A

ART UNIT

PAPER NUMBER

2822

DATE MAILED: 06/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/620,649

Applicant(s)

KAYA, CETIN NMI

Examiner

Mary Wilczewski

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 12-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20 is/are allowed.
- 6) ☒ Claim(s) 12-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 12, 13, 15, and 16 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Van Buskirk, U.S. Patent 6,001,689, of record.

Van Buskirk et al. disclose an integrated circuit comprising a floating gate memory array wherein the array comprises a plurality of gate stacks having a channel dielectric (61, 62, 63), a polysilicon floating gate (51, 52, 53), a dielectric region disposed outwardly from the floating gate (71, 72, 73), and a polysilicon gate electrode (41, 42, 43), and a plurality of dielectric isolation regions disposed between the gate stacks (26, 27, 28, and 29), see Fig. 2A and column 4, lines 1-10. The structure further comprises trenches and moats (Fig. 7A) formed between the stacks (column 5, lines 35-55). First oxide spacers (120-125) and oxide layer (101) are formed between the gate stacks and subsequently planarized to expose the polysilicon gate (41, 42, 43)(column 5, lines 35-65).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Buskirk et al. (U.S. Patent 6,001,689) in view of Woo et al. (U. S. Patent 5,926,711).

Van Buskirk et al. is applied as above. Van Buskirk et al. lacks anticipation only of using hemispherical grains of silicon as the floating gate. Woo et al. teach a floating gate transistor wherein the floating gate (24C) is formed of hemispherical grains of silicon (Fig. 3F and column 4, lines 35-55). It would have been obvious to one of ordinary skill in the art to use a floating gate having hemispherical grains of silicon in order to improve the capacitive coupling of the floating and control gates.

Claims 14 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Buskirk et al. (U.S. Patent 6,001,689) in view of Chen et al. (U. S. Patent 6,051,467).

Van Buskirk et al. is applied as above. Van Buskirk et al. lacks anticipation only of the thickness of the oxide layer in the ONO integrate dielectric. Chan et al. teach that a typical thickness for the oxide layer in an ONO integrate dielectric is between 50 and 100 angstroms (column 3, lines 40-50). It would have been obvious to one skilled in the

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art to use an oxide layer having a thickness of 50 to 100 angstroms in the known method of Van Buskirk et al. because it is well known to do so, as evidenced by Chan et al., and because this oxide layer thickness provides sufficient gate separation and capacitive coupling. Further, it would have been an obvious matter of design choice bounded by well known manufacturing constraints and ascertainable by routine experimentation and optimization to choose particular thicknesses because Applicant has not disclosed that the claimed thicknesses are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical, and it appears prima facie that the process would possess utility using thicknesses other than those claimed. Indeed, it has been held that optimization of range limitations are prima facie obvious absent a disclosure that the limitations are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical.

### ***Allowable Subject Matter***

Claim 20 is allowable over the prior art of record.

### ***Response to Arguments***

Applicant's arguments filed November 17, 2003 have been fully considered but they are not persuasive. In the Request for Continued Examination filed on January 16, 2004, Applicant requested that the arguments presented in the Request for Rehearing be considered by the Examiner. Applicant has relied upon a decision by the United States Supreme Court in Pfaff v Wells Electronics, 525 US 55 (US 1998) to support the

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argument that 35 USC 102(b) does not require an *invention* to be reduced to practice.

Applicant's arguments have been considered by the Board of Patent Appeals and Interferences in the Decision on Rehearing rendered December 31, 2003. In their decision, the Board stated that since the question before the Supreme Court in Pfaff was "whether the commercial marketing of a newly invented product may mark the beginning of the 1-year period [set forth in 35 USC 102(b)] even though the invention has not yet been reduced to practice", Pfaff has little, if any, relevance to the facts of this application, since Pfaff did not address 37 CFR 1.131. In the present case, the claims have been rejected under 35 USC 102(e) as unpatentable over Van Buskirk. Applicant has alleged that the requirements of 37 CFR 1.131 have been met to effectively antedate the Van Buskirk reference. However, for the reasons already of record, Applicant has not satisfied the requirements of 37 CFR 1.131. Hence, the rejection of claims 12-19 has been maintained.

### ***Conclusion***

Any inquiry concerning this communication should be directed to Mary Wilczewski at telephone number (571) 272-1849.



Mary Wilczewski  
Primary Examiner  
Tech Center 2800